Section Three – Vehicle Maintenance & Operation

Objectives

1. Describe the requirements an aftermarket vendor must follow when repairing or replacing school bus components.
2. Know that FMVSS #111; "Rearview Mirrors," requires laying out a physical mirror adjustment grid available for school bus drivers where their school buses are parked and maintained.
3. Identify the dimensions of the mirror adjustment grid.
4. Differentiate between an approved harness and one not authorized by FMVSS #213.
5. Identify the types of school buses.
6. Differentiate between a school bus and a multifunction activity school bus.
7. Define the functions of the interlock on the platform lift system.
8. Identify and explain the components of Michigan's Model Bus Maintenance Program.

Act No. 62
Public Acts of 2011
Approved by the Governor
June 21, 2011
Filed with the Secretary of State
June 21, 2011
EFFECTIVE DATE: June 21, 2011

An Act to Amend PA-94 of 1979
"The State School Aid Act"
2011 – 2012 School Year

Sec. 74. (1) From the amount appropriated in section 11, there is allocated an amount not to exceed **$2,558,800.00 for2010-2011** and an amount **not to exceed $3,154,600.00 for 2011-2012** for the purposes of this section.

(2) From the allocation in subsection (1), there is allocated for each fiscal year the amount necessary for payments to state supported colleges or universities and intermediate districts providing school bus driver safety instruction pursuant to section 51 of the pupil transportation act, 1990 PA 187, MCL 257.1851. The payments shall be in an amount determined by the department not to exceed 75% of the actual cost of instruction and driver compensation for each public or nonpublic school bus driver attending a course of instruction. For the purpose of computing compensation, the hourly rate allowed each school bus driver shall not exceed the hourly rate received for driving a school bus. Reimbursement compensating the driver during the course of instruction shall be made by the department to the college or university or intermediate district providing the course of instruction.

(3) From the allocation in subsection (1), there is allocated each fiscal year the amount necessary to pay the reasonable costs of non-special education auxiliary services transportation provided pursuant to section 1323 of the revised school code, MCL 380.1323. Districts funded under this subsection shall not receive funding under any other section of this article for non-special education auxiliary services transportation.

(4) From the funds allocated in subsection (1), there is allocated an amount not to exceed $933,800.00 for 2010-2011 and an amount not to exceed **$1,529,600.00 for 2011-2012** for reimbursement to districts and intermediate districts for costs associated with the **inspection of school buses and pupil transportation vehicles by the department of state police** as required under section 715a of the Michigan vehicle code, 1949 PA 300, MCL 257.715a, and section 39 of the

pupil transportation act, 1990 PA 187, MCL 257.1839. The department of state police shall prepare a statement of costs attributable to each district for which bus inspections are provided and submit it to the department and to each affected district in a time and manner determined jointly by the department and the department of state police. The department shall reimburse each district and intermediate district for costs detailed on the statement within 30 days after receipt of the statement. Districts for which services are provided shall make payment in the amount specified on the statement to the department of state police within 45 days after receipt of the statement. The total reimbursement of costs under this subsection shall not exceed the amount allocated under this subsection. Notwithstanding section 17b, payments to eligible entities under this subsection shall be paid on a schedule prescribed by the department.

Michigan Department of State Police

Traffic Safety Division – "School Bus Decal Application Policy"
School Bus Inspection Manual

Open Letter to School District Officials and School Bus Dealers
July 16, 2003

JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF STATE POLICE
LANSING

COL. TADARIAL J. STURDIVANT
DIRECTOR

The Michigan State Police, Motor Carrier Division has reviewed its policy on the use of positioning belts on school buses and is of the opinion that these belts are "seat belts." As a seat belt, the Motor Vehicle Code requires that they meet the applicable FMVSS regulations (FMVSS Nos. 209 and 210) for the seat belt and the anchorage system. An issue that is occasionally raised regarding the use of the "positioning belt" is that an Individualized Education Plan (IEP) mandates the positioning belt for the student. While the IEP may involve transportation as a service to meet a student's needs, the IEP cannot contravene state statute or federal regulation.

While there is no mandate for a passenger to wear a seat belt on a school bus, Michigan law requires that if one is installed, it must in fact meet the specifications for a seat belt. Beginning with the school bus inspection cycle starting on September 1, 2003, State Police Vehicle Safety Inspectors will red tag a school bus equipped with any type of restraining device that is in violation of state law.

For many years, both the Michigan State Police and the Department of Education issued letters of approval to schools for various add-on equipment. The Michigan State Police will no longer issue these approval letters, and will not honor an approval letter that violates state law for any school bus placed in service on or after September 1, 2003. School buses currently operating under the conditions of an approval letter not in violation of state law may continue in operation for the life of the bus.

The Federal Motor Vehicle Safety Standards (FMVSS), through the Pupil Transportation Act, requires that dealers, distributors, and aftermarket installers certify that school buses meet or exceed all of the FMVSS. It also requires that all add-on aftermarket equipment meets the FMVSS and that the installation of aftermarket equipment does not cause the vehicle to violate the FMVSS, the Pupil Transportation Act, or the Motor Vehicle Code.

School officials should ensure that when they purchase a school bus, have a school bus modified in some manner, or have aftermarket equipment installed on a bus, that the dealer, distributor, and/or installer provides written certification that the bus and the aftermarket equipment meets the FMVSS and does not violate any state law, including the Pupil Transportation Act and the Michigan Motor Vehicle Code.

The Michigan State Police, School Bus Inspection Program is specific to certain equipment and critical safety components. The inspection does not certify compliance to FMVSS or make a determination that the vehicle, as altered, meets all state or federal statutes. The Michigan State Police does not have the equipment or resources to ensure that a school bus or equipment meets federal crash-testing standards or similar regulations. It is the responsibility of the manufacturer of the vehicle or equipment to verify compliance.

The Michigan State Police, Motor Carrier Division will continue to review aftermarket equipment upon request of a school, dealer, or distributor and provide guidance, to the extent possible, on the legality of the equipment only.

The Michigan State Police is committed to ensuring a safe transportation system for Michigan's approximately 900,000 children who ride a school bus each day. We appreciate the effort of our school and bus manufacturing partners in making Michigan one of the safest states in the country for pupil transportation. Should you have any questions regarding any of the above-mentioned issues, please contact Lt. David W. Ford at 517-336-6449.

ROBERT R. POWERS, JR., CAPTAIN
Commanding Officer, Motor Carrier Division

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Federal Motor Vehicle Safety Standards
Excerpts from #111 Review Mirrors

§ 571.111 Standard No. 111; Review mirrors

S1. *Scope* This standard specifies requirements for the performance and location of rearview mirrors.

S2. *Purpose* The purpose of this standard is to reduce the number of deaths and injuries that occur when the driver of a motor vehicle does not have a clear and reasonably unobstructed view to the rear.

S3. *Application* This standard applies to passenger cars, multipurpose passenger vehicles, trucks, buses, **school buses** and motorcycles.

S9. *Requirements for School Buses* When a school bus is tested in accordance with the procedures of S13, it shall meet the requirements of S9.1 through S9.4.
S9.1 Outside Rearview Mirrors. Each school bus shall have two outside rearview mirror systems: System A and System B.
S9.2 System A shall be located with stable supports so that the portion of the system on the bus's left side and the portion on its right side, each:

(a) Includes at least one mirror of unit magnification with not less than 323 cm2 of reflective surface; and
(b) Includes one or more mirrors, which together provide, at the driver's eye location, a view of:

(1) For the mirror system on the ***right side of the bus***, the entire top surface of cylinder N in Figure 2, and that area of the ground which extends rearward from cylinder N to a point not less than 61 meters from the mirror surface.
(2) For the mirror system on the ***left side of the bus***, the entire top surface of cylinder M in Figure 2, **and** that area of the ground which extends rearward from cylinder M to a point not less than 61 meters from the mirror surface.

S9.3 (a) For each of the cylinders A through P whose entire top surface is not directly visible from the driver's eye location, System B shall provide, at that location.

(1) A view of the entire top surface of that cylinder.
(2) A view of the ground that overlaps with the view of the ground provided by System A.

(b) Each mirror installed in compliance with S9 3(a) shall meet the following requirements:

(1) Each mirror shall have a projected area of at least 258 cm2, as measured on a plane at a right angle to the mirror's axis.

(2) Each mirror shall be located such that the distance from the center point of the eye location of a 25th percentile adult female seated in the driver's seat to the center of the mirror shall be at least 95 cm.
(3) Each mirror shall have no discontinuities in the slope of the surface of the mirror.
(4) Each mirror shall be installed with a stable support.

(c) Each school bus which has a mirror installed in compliance with S9.3(a) that has an average radius of curvature of less than 889mm, as determined under S12, shall have a label visible to the seated driver. The label shall be printed in a type face and color that are clear and conspicuous. The label shall state the following:

''USE CROSS VIEW MIRRORS TO VIEW PEDESTRIANS WHILE BUS IS STOPPED; DO NOT USE THESE MIRRORS TO VIEW TRAFFIC WHILE BUS IS MOVING. IMAGES IN SUCH MIRRORS DO NOT ACCURATELY SHOW ANOTHER VEHICLE'S LOCATION.''

S13. *School bus mirror test procedures.* The requirements of S9.1 through S9.4 shall be met when the vehicle is tested in accordance with the following conditions.
S13.1 The cylinders shall be a color which provides a high contrast with the surface on which the bus is parked.
S13.2 The cylinders are 0.3048 m high and 0.3048 m in diameter, except for cylinder P which is 0.9144 m high and 0.3048 m in diameter.
S13.3 Place cylinders at locations as specified in S13.3 (a) through S13.3 (g) and illustrated in Figure 2. Measure the distances shown in Figure 2 from a cylinder to another object from the center of the cylinder as viewed from above.

(a) Place cylinders G, H, and I so that they are tangent to a transverse vertical plane tangent to the forward most surface of the bus's front bumper. Place cylinders D, E, F so that their centers are located in a transverse vertical plane that is 1.8288 meters (6 feet) forward of a transverse vertical plane passing through the centers of cylinders G, H, and I. Place cylinders A, B, and C so that their centers are located in a transverse vertical plane that is 3.6576 meters (12 feet) forward of the transverse vertical plane passing through the centers of cylinders G, H, and I.
(b) Place cylinders B, E, and H so that their centers are in a longitudinal vertical plane that passes through the bus's longitudinal centerline.
(c) Place cylinders A, D, and G so that their centers are in a longitudinal vertical plane that is tangent to the most outboard edge of the left side of the bus's front bumper.
(d) Place cylinders C, F, and I so that their centers are in a longitudinal vertical plane that is tangent to the most outboard edge of the right side of the bus's front bumper.
(e) Place cylinder J so that its center is in a longitudinal vertical plane 0.3048 meters (1 foot) to the left of the longitudinal vertical plane passing through the centers of cylinders A, D, and G, and is in the transverse vertical plane that passes through the centerline of the bus's front axle.

(f) Place cylinder K so that its center is in a longitudinal vertical plane 0.3048 meters (1 foot) to the right of the longitudinal vertical plane passing through the centers of cylinders C, F, and I, and is in the transverse vertical plane that passes through the centerline of the bus's front axle.
(g) Place cylinders L, M, N, O, and P so that their centers are in the transverse vertical plane that passes through the centerline of the bus's rear axle. Place cylinder L so that its center is in a longitudinal vertical plane that is 1.8288 meters (6 feet) to the left of the longitudinal vertical plane tangent to the bus's most outboard left surface (excluding the mirror system). Place cylinder M so that its center is in a longitudinal vertical plane that is 0.3048 meters (1 foot) to the left of the longitudinal vertical plane tangent to the left side of the bus. Place cylinder N so that its center is in a longitudinal vertical plane that is 0.3048 meters (1 foot) to the right of the longitudinal vertical plane tangent to the right side of the bus. Place cylinder O so that its center is in a longitudinal vertical plane that is 1.8288 meters (6 feet) to the right of the longitudinal vertical plane tangent to the right side of the bus. Place cylinder P so that its center is in a longitudinal vertical plane that is 3.6576 meters (12 feet) to the right of the longitudinal vertical plane tangent to the right side of the bus.

MSP/MCD DECAL APPLICATION POLICY FOR SCHOOL BUSES
MIRRORS

Exterior Mirrors: General

All vehicles shall comply with the unobstructed vision requirement specified in FMVSS 571.111.

YELLOW: Mirrors shall be mounted on a stable support
YELLOW: Mirrors cracked or clouded to the extent that rear vision is obscured. *NST-SBI 11.93*
RED: Any required mirror missing or broken *NST-SBI 11.93*
RED: Fails to meet the field of vision standard ***FMVSS 571.111***
RED: Mirrors have sharp edges
RED: Any mirror that will not hold a set adjustment *NST-SBI 11.93*

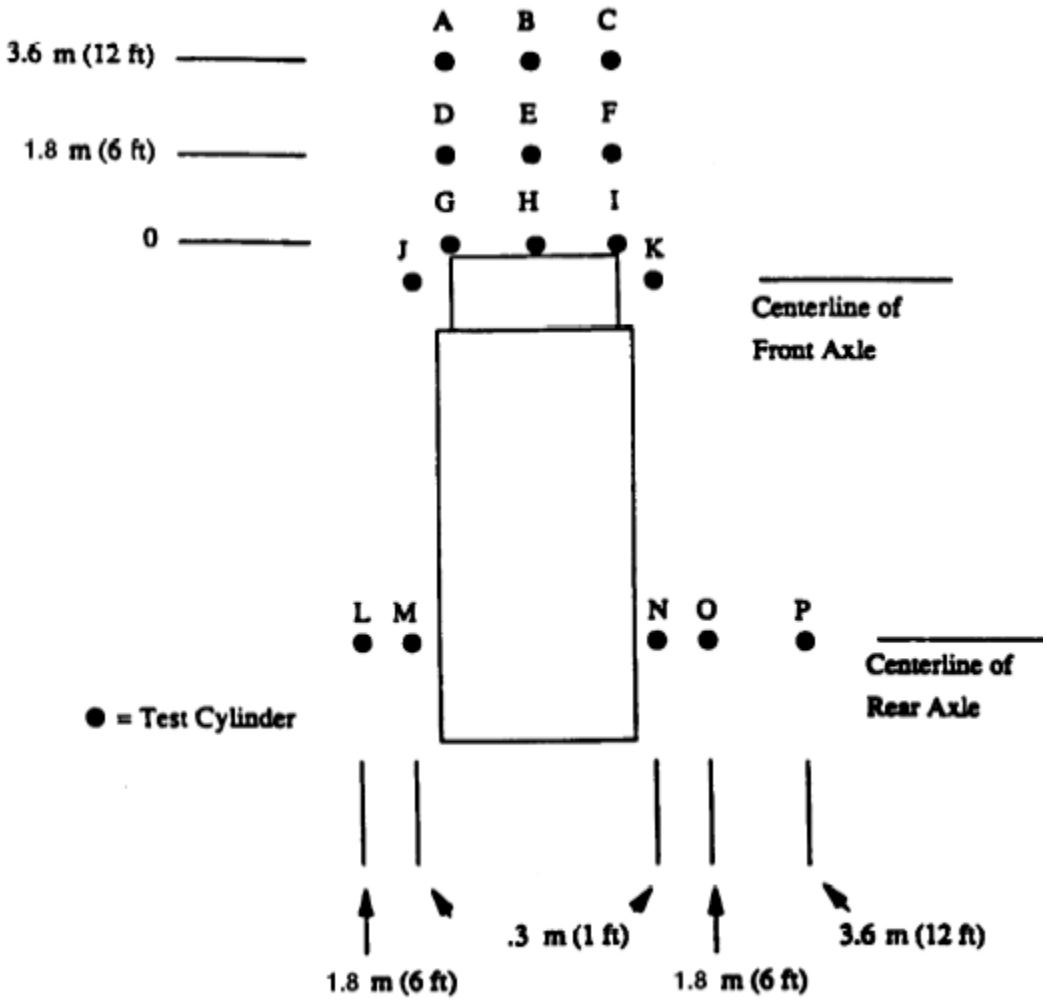

Figure 2.—Location of Test Cylinders for School Bus Field-of-View Test
All Dimensions in Meters (m)

§ 571.213 Standard No. 213; Child restraint systems

S4. *Definitions.*

Harness means a combination pelvic and upper torso child restraint system that consists primarily of flexible material, such as straps, webbing or similar material, and that does not include a rigid seating structure for the child.

S5.3 *Installation.*

S5.3.1 Add-on child restraints shall meet either (a) or (b), as appropriate.

(a) Except for components designed to attach to a child restraint anchorage system, each add-on child restraint system must not have any means designed for attaching the system to a vehicle seat cushion or vehicle seat back and any component (except belts) that is designed to be inserted between the vehicle seat cushion and vehicle seat back.

(b) Harnesses manufactured for use on school bus seats must meet S5.3.1(a) of this standard, unless a label that conforms in content to Figure 12 and to the requirements of S5.3.1(b)(1) through S5.3.1(b)(3) of this standard is permanently affixed to the part of the harness that attaches the system to a vehicle seat back. Harnesses that are not labeled as required by this paragraph must meet S5.3.1(a).

(1) The label must be plainly visible when installed and easily readable.

(2) The message area must be white with black text. The message area must be no less than 20 square centimeters.

(3) The pictogram shall be gray and black with a red circle and slash on a white background. The pictogram shall be no less than 20 mm in diameter.

S5.3.2 Each add-on child restraint system shall be capable of meeting the requirements of this standard when installed solely by each of the means indicated in the following table for the particular type of child restraint system:

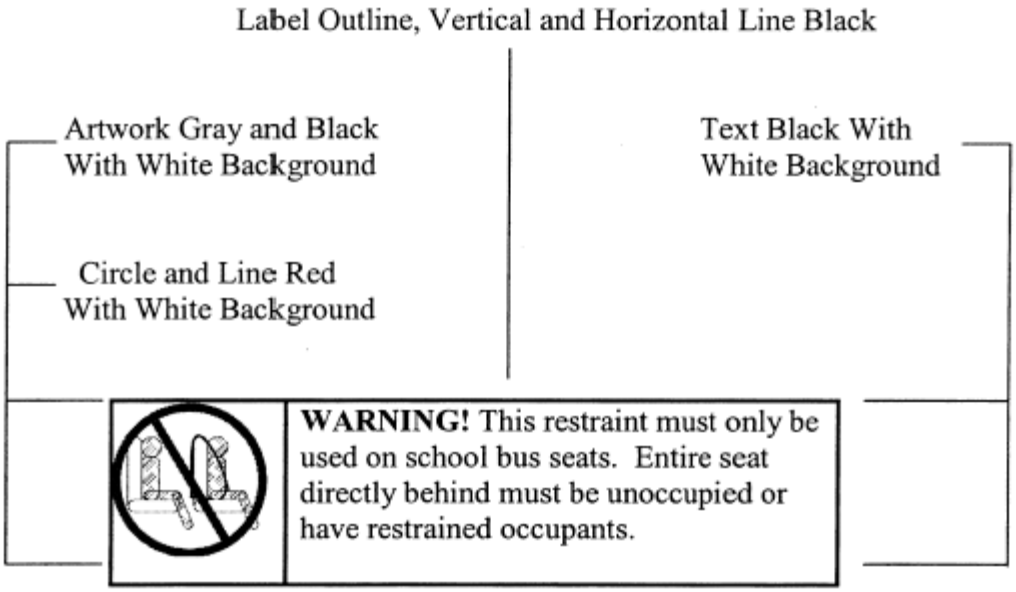

Figure 12. Label on Harness Component That Attaches to School Bus Seat Back.

School Buses Traditional & Non-Traditional

MCL 257.1807 Definitions; S, T

Sec. 7.

(1) "School bus" means a motor vehicle with a manufacturer's rated seating capacity of 11 or more passengers, including the driver, used for the transportation of preprimary, primary, or secondary school pupils to or from school or school-related events or a multifunction school activity bus manufactured after September 2, 2003 as defined in 49 CFR 571.3, 49 CFR 571.108, and 49 CFR 571.131. School bus does not include a vehicle operated by a public transit agency or authority. A vehicle that is not a school bus is not subject to this act. For the purposes of this act, a parent, or legal guardian transporting his or her child or another child with written permission of the other child's parent or legal guardian on a school-related event is not subject to this act.

(2) "Type I school bus" means a school bus with a gross vehicle weight rating of more than 10,000 pounds.

(3) "Type II school bus" means a school bus with a gross vehicle rating of 10,000 pounds or less.

History: 1990, Act 187, Eff. Aug. 15, 1990 ;-- Am. 1992, Act 227, Imd. Eff. Oct. 16, 1992 ;-- Am. 2000, Act 49, Imd. Eff. Mar. 29, 2000 ;-- Am. 2006, Act 107, Eff. Aug. 15, 2006

Traditional School Bus **Non-Traditional School Bus**

School Bus **Multifunction School Activity Bus MSAB**

Not a School Bus

Sec. 571.403 Standard No. 403; Platform Lift Systems for Motor Vehicles

S1. **Scope.** This standard specifies requirements for platform lifts used to assist persons with limited mobility in entering or leaving a vehicle.

S2. **Purpose**. The purpose of this standard is to prevent injuries and fatalities to passengers and bystanders during the operation of platform lifts installed in motor vehicles.

S3. **Application.** This standard applies to platform lifts manufactured on and after April 1, 2005, that are designed to carry passengers into and out of motor vehicles.

S4. **Definitions.**

S6.10 **Interlocks***.*
S6.10.1 Except when the platform lift is operated in backup mode as required by S6.9, the requirements of S6.10.2 must be met, both with and without a standard load on the lift.
S6.10.2 The platform lift system must have interlocks or operate in such a manner when installed according to the installation instructions, as to prevent:
S6.10.2.1 Forward or rearward mobility of the vehicle unless the platform lift is stowed. The design of this system must be such that it discourages accidental release and does not affect vehicle movement when the lift is stowed until the vehicle is stopped and the lift deployed. Verification with this requirement is made throughout the lift operations specified in S7.9.2 and S7.9.3.
S6.10.2.2 Operation of the platform lift from the stowed position until forward and rearward mobility of the vehicle is inhibited, by means of placing the transmission in park or placing the transmission in neutral and actuating the parking brake or the vehicle service brakes by means other than the operator depressing the vehicle's service brake pedal. Verification with this requirement is made throughout the lift operations specified in S7.9.2 and S7.9.3.
S6.10.2.3 Stowing of the platform lift when occupied by portions of a passenger's body, and/or a mobility aid. Platform lifts designed to be occupied while stowed and platform lifts that manually stow (fold) are excluded from this requirement. Verification with this requirement is made using the test device specified in S7.1.4. Move the deployed platform lift to a position within the range of passenger operation where it will stow if the control specified in S6.7.2.5 is actuated. Place the test device specified in S7.1.4 on its narrowest side on any portion of the platform surface that coincides with the unobstructed platform operating volume described in S6.4.2. Using the operator control specified in S7.7.2.5, attempt to stow the lift. The interlock must prevent the lift from stowing.

S6.10.2.4 Movement of the platform up or down unless the inner roll stop required to comply with S6.4.8 is deployed. When the platform reaches a level where the inner roll stop is designed to deploy, the platform must stop unless the inner roll stop has deployed. Verification with this requirement is made by performing the test procedure specified in S7.6.
S6.10.2.5 Movement of the platform up or down, throughout the range of passenger operation, when the platform surface is above a horizontal plane 75 mm (3 in) above the ground level loading position, unless the wheelchair retention device required to comply with S6.4.7 is deployed throughout the range of passenger operations. Verification of compliance is made using the test procedure specified in S 7.5.
S6.10.2.6 In the case of a platform lift that is equipped with an outer barrier, deployment of the outer barrier, when it is occupied by portions of a passenger's body or mobility aid throughout the lift operations. Verification of compliance is made using the test procedure specified in S 7.5.
S6.10.2.7 Deployment of any inner roll stop required to comply with S6.4.8, when the inner roll stop is occupied by portions of a passenger's body or mobility aid throughout the lift operations. Verification of compliance with this requirement uses the test procedure specified in S7.6.

Sec. 571.404 Standard No. 404; Platform lift installations in motor vehicles.

S1. **Scope**. This standard specifies requirements for vehicles equipped with platform lifts used to assist persons with limited mobility in entering or leaving a vehicle.
S2. **Purpose**. The purpose of this standard is to prevent injuries and fatalities to passengers and bystanders during the operation of platform lifts installed in motor vehicles.
S3. **Application**. This standard applies to motor vehicles manufactured on and after July 1, 2005, that are equipped with a platform lift to carry passengers into and out of the vehicle.
S4.2 **Vehicle owner's manual insert requirements**. If the vehicle is equipped with an owner's manual, the owner's manual must contain the inserts provided by the lift manufacturer pursuant to S6.12 of 49 CFR 571.403.
S4.3 **Control panel switches**.
S4.3.1 Instructions regarding the platform lift operating procedures, including backup operations, as specified by S6.7.8 of 49 CFR 571.403, must be permanently affixed to a location adjacent to the controls.
S4.3.2 **Public use lift**: In addition to meeting the requirements of S4.3.1, for vehicles equipped with public use lifts, as defined in 49 CFR 571.403, any and all controls provided for the lift by the platform lift

National Highway Traffic Safety Administration
Vehicle Recall Alert
School Bus Recall Alerts

School Bus Recall Alert Report

Michigan's Model School Bus Maintenance Program[1]

Components of the Model School Bus Maintenance Program

- **Safety Inspection:** An "in-house" school bus safety inspection program performed at a maximum of 36 workday intervals, 3,500 miles, or 300 gallons of fuel with prompt deficiency repair.
- **Preventative Maintenance:** A lube, oil, filter service interval consistent with the engine manufacturer's recommendation and the vehicle equipment.
- **Daily Trip Inspection:** Driver completes a pre/post trip vehicle inspection with maintenance report when needed.
- **Special Projects:** You carry out a special project to address identified service issues and correct detected deficiencies.
- **Maintenance Records:** A vehicle maintenance records system permitting ready access to each vehicle's maintenance information and a system that tracks maintenance costs by year of ownership for the vehicles entire service life.
- **Repair Staff:** Highly trained, knowledgeable, and certified mechanics and/or vehicle repair staff with appropriate staffing levels.

Planning Garage Operations Consolidation or Cooperation? Must see information:

Garage Operation Consolidation - Opinion of Michigan Department of State

Garage Operation Consolidation - Interpretation of Thrun Law Firm, P.C.

[11] The complete copy of Michigan's Model Maintenance Program and School Bus Safety Inspection can be found on the MVU and MDoE websites under Part I: "Back-to-School Briefing" Resources and Materials.